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A List of the Marine Mammals of the World

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UNITED STATES DEPARTMENT OF THE INTERIOR
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By

DALE W. RICE and VICTOR B. SCHEFFER

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A List of the Marine Mammals of the World[1]

By

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ABSTRACT

Listed are 117 species of Recent marine mammals, including fresh-water species of the predominantly marine groups. The numbers of species are: Order Carnivora (1), Order Pinnipedia (33), Order Sirenia (5), Order Mysticeti (10), and Order Odontoceti (68). The geographical distribution of each species is shown. The systematic status of little-known species is discussed.

INTRODUCTION

Listed here are the living and recently extinct marine mammals of the world: the sea otter, pinnipeds, sirenians, and cetaceans. Living fresh-water pinnipeds, sirenians, and cetaceans are included.

Any attempt to classify marine mammals is difficult because they are poorly known. Some live on the high seas and others on remote oceanic islands or among polar ice fields. Some sirenians and smaller cetaceans live in tropical waters seldom visited by mammalogists. The carcasses of marine mammals are large, greasy, and bloody, and often putrefy before they are brought to the attention of biologists. They are difficult and expensive to collect and to preserve for study. As a result, some kinds are represented in scientific collections by only a few skulls, and their external appearance is poorly known.

Thus, any list of the marine mammals, especially of the smaller cetaceans, can be regarded only as provisional. Classification in the present list is carried to the subspecific level for pinnipeds and sirenians. Cetaceans, in general, are too poorly known for subspecies to be defined, but we have listed the proposed races that appear to be valid. The sea otter is monotypic.

The arrangement of the pinnipeds follows Scheffer (1958), with some changes, the authorities for which are cited in the text. Evidence is accumulating that seals are descended from two stocks that originated independently from canoid carnivores (McLaren, 1960). The stocks are now represented by the Otarioidea (Families Otariidae and Odobenidae) and the Phocoidea (Family Phocidae). Edward D. Mitchell, Jr. (Fisheries Research Board of Canada) and Charles A. Repenning (U.S. Geological Survey), among others, are studying the systematic position of the seals in the light of fossil evidence.

The cetaceans are divided into two orders--Odontoceti and Mysticeti--for reasons stated by Rice (in Anderson and Jones, 1967). The classification at the family level departs from the classification in that book; the division of the Delphinidae into the three families proposed by Fraser and Purves (1960)--Delphinidae, Phocaenidae, and Stenidae--is not adopted. We believe that insufficient evidence has been published to support the validity of these taxa, and that much more study is needed before such a change can be accepted. Even if phylogenetically valid, these taxa do not seem to merit more than subfamilial rank when compared with the range of variation in the Physeteridae and Platanistidae. We therefore follow tradition in regarding the living odontocetes as divisible into five families, a tradition most recently endorsed by Hershkovitz (1966). The arrangement of the cetaceans at the generic level follows Rice (in Anderson and Jones, 1967). Classification at the specific level, often provisional, is explained under each genus.

The following three generic names, one specific name, and one family name are senior synonyms of names used in this list; according to Article 23b of the International Code for Zoological Nomenclature (International Trust for Zoological Nomenclature,

[1] A revision of an earlier list under the same title (Scheffer and Rice, 1963).

1961), these names are nomina oblita, and cannot replace the names here employed, which have been in universal use for over 50 years:

Stenorhinchus E. Geoffroy St.-Hilaire and F. Cuvier, 1826 (=Hydrurga Gistel, 1848)
Susu Lesson, 1828 (=Platanista Wagler, 1830)
Nodus Wagler, 1830 (=Mesoplodon Gervias, 1850)
Tursiops nesarnack Lacépède, 1804 (=T. truncatus Montagu, 1821)
Hyperoodontidae Gray 1846 (=Ziphiidae Gray, 1865)

Synonyms commonly used in recent literature are listed on page 11; see Scheffer (1958) for synonymy of pinnipeds and Hershkovitz (1966) for synonymy of cetaceans.

Vernacular names are included for most species. Many small cetaceans lack distinctive vernacular names, and some names listed here are "book" names. For some we have found no recorded vernacular names.

Place names are spelled in accordance with recommendations of the Army Map Service, Geographic Names Division. Where this agency offers a choice, we have chosen the conventional name.

Order CARNIVORA

Family MUSTELIDAE

Genus ENHYDRA Fleming, 1822

Enhydra lutris Linnaeus, 1758 (sea otter). Formerly ranged from Morro Hermoso, Baja California, north along the coast to Prince William Sound and the south shore of the Alaska Peninsula, throughout the Aleutian, Pribilof, and Commander Islands, along the southeast coast of Kamchatka, and through the Kuril Islands to northern Hokkaido. Now breeds mainly in central California, Prince William Sound, the Shumagin Islands, the south side of the Alaska Peninsula, and in the Aleutian, Commander, and Kuril Islands. No subspecies are recognizable (Scheffer and Wilke, 1950). The Alaska Department of Fish and Game transplanted 53 sea otters from Prince William Sound to Chichagof Island in 1965-66. A monograph on the sea otter is in press (Kenyon).

Order PINNIPEDIA

Family OTARIIDAE

Genus OTARIA Péron, 1816

Otaria flavescens Shaw, 1800 (South American sea lion). Coastal waters from Recife das Tôrres, Brazil, and Zorritos, Peru, southward to Strait of Magellan and Falkland Islands. In our 1963 list we used the specific name byronia Blainville, 1820. Philip Hershkovitz pointed out (in litt. 1967) that "the type of flavescens was a tangible specimen preserved in the old Leverian museum. It was adequately described and figured, is perfectly identifiable and has a valid type locality. Its name has priority, usage and currency."

Genus PHOCARCTOS Gray, 1844

Phocarctos hookeri Gray, 1844 (New Zealand sea lion; Auckland Islands sea lion). Subantarctic islands south of New Zealand; breeds regularly only at Carnley Harbor and Enderby Island in the Auckland Islands, rarely at Campbell Island. Hauls out on Snares Islands, Macquarie Island, and South Island, New Zealand. For discussion of the relationships of Phocarctos, Neophoca, and Zalophus see King (1960) and Mitchell (1966a).

Genus NEOPHOCA Gray, 1866

Neophoca cinerea Péron, 1816 (Australian sea lion; white-capped sea lion). Coastal waters from Kangaroo Island, South Australia, to Houtman Rocks, Western Australia.

Genus ZALOPHUS Gill, 1866

Zalophus californianus Lesson, 1828 (California sea lion; black sea lion). One race (Z. c. californianus) breeds from San Miguel Island, Calif. (Peterson and Bartholomew, 1967), south to Punta Entrada, Baja California, and on islands in the upper Gulf of California, ranging at sea north to Vancouver Island, south to Cabo San Lucas and Mazatlan. A second race (Z. c. japonicus Peters, 1866) was known from the Sea of Japan but was probably exterminated in the 1950's (International Union for Conservation of Nature and Natural Resources, 1966). A third race (Z. c. wollebaeki Sivertsen, 1953) breeds on the Galapagos Islands.

Genus EUMETOPIAS Gill, 1866

Eumetopias jubatus Schreber, 1776 (northern sea lion). Breeds along west coast of North America from San Miguel Island, Calif., northwest to Prince William Sound and the Alaska Peninsula, throughout the Aleutian and Pribilof Islands, along the east coast of Kamchatka, throughout the Kuril Islands, and on islands in the Okhotsk Sea. Some move north into the Bering Sea in summer, as far as St. Lawrence Island. Sometimes hauls out on ice. The spelling of jubatus follows a rule in International Trust for Zoological Nomenclature (1961, p. 31): "a noun of variable gender . . . is to be treated as masculine . . . ."

Genus ARCTOCEPHALUS É. Geoffroy Saint Hilaire and F. Cuvier, 1826.

The breeding ranges of the species of Arctocephalus are strictly allopatric; further studies on the relationships of these seals are much needed. A. philippii stands apart and has been placed in a separate genus or subgenus, Arctophoca Peters, 1866.

Arctocephalus australis Zimmermann, 1783 (South American fur seal). Members of one race (A. a. australis) breed among the Falkland Islands; a second race (A. a. galapagoensis Heller, 1904) among the Galapagos Islands; and a third race (A. a. gracilis Nehring, 1887) along the coast from Recife das Tôrres, Brazil, to extreme southern Chile. Specific identity of the fur seals of western South America is unknown (see A. philippii). Alvaro Piazza Larraondo wrote (in litt., 3 June 1965) that about 5,000 fur seals are distributed along Peru from lat. 17°42' S. to lat. 13°52' S.

Arctocephalus doriferus Wood Jones, 1925 (Australian fur seal). Breeds in scattered groups along coast of southwestern Australia from Eclipse Island, Western Australia, to Kangaroo Island, South Australia; and coast of southeastern Australia from Lady Julia Percy Island, Victoria, to Sydney, N.S.W., including coasts of Tasmania and islands in Bass Strait. King (1964) retained the name A. tasmanicus Scott and Lord, 1926, for the seals of the latter area. The systematic status of the Australian fur seals, which is much confused, is under study by Judith E. King of the British Museum (Natural History).

Arctocephalus forsteri Lesson, 1828 (New Zealand fur seal). Breeds around South Island, New Zealand, and on nearby subantarctic islands: Chatham, Bounty, Antipodes, Auckland, Campbell, Macquarie, Snares Islands, Stewart, and Solander.

Arctocephalus pusillus Schreber, 1776 (South African fur seal). Breeds in temperate coastal waters from Cape Cross, South-West Africa, to Algoa Bay, South Africa. Ranges north to Angola in winter.

Arctocephalus tropicalis Gray, 1872 (subantarctic fur seal; Kerguélen fur seal). Subantarctic islands of Atlantic Ocean and Indian Ocean. Members of one race (A. t. tropicalis) breed on islands north of the Antarctic Convergence (Tristan da Cunha, Gough, Marion, Prince Edward, Crozet, Amsterdam, and St. Paul); and members of another (A. t. gazella Peters, 1875) on islands south of it (South Shetlands, South Orkneys, South Sandwich, South Georgia, Bouvet, Kerguélen, and Heard). One individual of A. t. tropicalis was recently seen hauled out among A. forsteri on Macquarie Island.

Arctocephalus philippii Peters, 1866 (Guadalupe fur seal). One race A. p. philippii), perhaps now extinct, is certainly known only from Islas Juan Fernandez, west of Chile (see note under A. australis). Another race (A. p. townsendi Merriam, 1897) is now known to breed only on Isla Guadalupe, Baja California. Fur seals of unknown identity, thought to be this species, formerly bred from Farallon Islands, Calif., south to Isla Cedros, Baja California. Four seals photographed near Isla Más a Tierra (Isla Róbinson Crusoe) in 1966 may be surviving members of the subspecies philippii.

Genus CALLORHINUS Gray, 1859

Callorhinus ursinus Linnaeus, 1758 (northern fur seal). Breeds on the Pribilof and Commander Islands in the Bering Sea, Ostrov Tyuleniy (Robben Island) in the Okhotsk Sea, and the Kuril Islands. Formerly bred on Ostrov Iony in the Okhotsk Sea 120 miles north of Sakhalin (Stejneger, 1898, p. 81-82), and possibly on Buldir Island in the Aleutians (Murie, 1959, p. 306-307). Seals breeding on different islands are anatomically indistinguishable. Ranges at sea in winter and spring south to Japan and northern Baja California.

Family ODOBENIDAE

Genus ODOBENUS Brisson, 1762

Odobenus rosmarus Linnaeus, 1758 (walrus). Shallow waters near ice in the Arctic Ocean and adjacent seas. Conventionally, two races--Atlantic-Arctic (O. r. rosmarus) and Pacific-Arctic (O. r. divergens Illiger, 1815)--are recognized (e.g., King, 1964, p. 37). The Atlantic race contains two breeding groups: (1) Kara Sea to eastern Greenland and (2) western Greenland and eastern Canada. The latter population may be subspecifically distinct. The Pacific race contains one or two breeding groups that have total distribution from Beaufort Sea to Laptev Sea. Mansfield (1959, p. 1) stated the possibility that the herds frequenting the Laptev Sea are geographically isolated.

Family PHOCIDAE

Genus PHOCA Linnaeus, 1758

The taxonomy of the genus Phoca in the northwestern Pacific and adjacent seas is

very complex (McLaren, 1966, and references cited by him; Chapskii, 1967).

The taxonomy of the genus Phoca is complicated by three main factors: (1) Individual variation in pelage pattern is great. (2) Some populations now isolated have not been isolated long in geologic time, and as a consequence they show only slight differences in skull characters. (3) Rapid evolution is apparently taking place among the seals near the edge of the ice in the North Pacific and adjacent seas. We tentatively follow McLaren (1966) in recognizing three species.

Phoca vitulina Linnaeus, 1758 (harbor seal). Shores of North America and Europe from about lat. 30° N. to the edge of arctic ice. Gives birth on land in May-August; the pup sheds its white coat in utero. Two races are certainly valid. The Atlantic race (P. v. vitulina) is distinguishable from the Pacific race (P. v. richardi Gray, 1864) by skull characters. Western North Atlantic seals are often called P. v. concolor DeKay, 1842, but Doutt (1942) could find no differences between seals of the eastern and western Atlantic. P. v. mellonae Doutt, 1942, is said to be confined to the Seal Lakes complex of the Ungava Peninsula, though Mansfield (1967) doubted the validity of the race.

Phoca kurilensis Inukae, 1942 (Kuril seal). Breeds among the Kuril Islands and at northern Hokkaido. Sympatric with Phoca largha. Pupping occurs on shore in May; the white coat is shed in utero; the suckling period is prolonged--about 3 months (versus 3-4 weeks in P. vitulina and P. largha) (Belkin, 1964). We do not know the identity of Phoca seals occasionally seen south of Hokkaido and even to China.

Phoca largha Pallas, 1811 (largha seal). Edge of ice in Chukchi Sea and in northern Bering, Okhotsk, and Japan Seas. Gives birth on ice in late winter or spring and the pup retains its white coat for a week or more after birth. McLaren (1966) and Chapskii (1967), among others, regard this form as a full species.

Genus PUSA Scopoli, 1777

Pusa hispida Schreber, 1775 (ringed seal). Throughout the Arctic Ocean and adjacent seas, chiefly in fast ice, and in several Finnish lakes. Four geographically isolated peripheral populations are fairly well defined subspecies, one each from the Okhotsk Sea (P. h. ochotensis Pallas, 1811); the Baltic Sea (P. h. botnica Gmelin, 1788); Lake Ladoga (P. h. ladogensis Nordquist, 1899); and Lake Saimaa and adjacent lakes (P. h. saimensis Nordquist, 1899). Geographical variation in the Arctic Ocean and Bering Sea populations, tentatively referable to the nominate race, requires much further study.

Pusa sibirica Gmelin, 1788 (Baikal seal). Only in Lake Baikal, U.S.S.R., a freshwater body which freezes in winter.

Pusa caspica Gmelin, 1788 (Caspian seal). Only in Caspian Sea, U.S.S.R., the northern end of which freezes in winter.

Genus HALICHOERUS Nilsson, 1820

Halichoerus grypus Fabricius, 1791 (gray seal). Temperate coasts of the North Atlantic. There are three breeding populations: one in the western Atlantic from Newfoundland to Massachusetts, another in the eastern Atlantic from the British Isles (rarely France) and Iceland to the White Sea, and a third in the Baltic Sea. Seals of the western Atlantic and Baltic populations pup in February and March, seals of the eastern Atlantic in September to December.

Genus HISTRIOPHOCA Gill, 1873

Histriophoca fasciata Zimmermann, 1783 (ribbon seal). North Pacific Ocean, chiefly in pack ice, from northern Hokkaido and the Okhotsk Sea to northwestern Alaska.

Genus PAGOPHILUS Gray, 1844

Pagophilus groenlandicus Erxleben, 1777 (harp seal). North Atlantic Ocean, in pack ice from northern shores of Europe to eastern Canada. Breeds on pack ice in three main areas: the White Sea, north of Jan Mayen, and Newfoundland. (The Newfoundland seals breed in two centers: the "Front" north of the island and the "Gulf" west of it.) Seals of the three areas differ in size, cranial features, and body coloration (Khuzin, 1963, 1967; Yablokov and Sergeant, 1963; Yablokov and Etin, 1965). Racial names have been given to the Newfoundland stock (P. g. groenlandicus) and that of the White Sea (P. g. oceanicus Lepechin, 1778), but not to the Jan Mayen stock (Smirnov, 1927).

Genus ERIGNATHUS Gill, 1866

Erignathus barbatus Erxleben, 1777 (bearded seal; ugruk). Circumboreal at edges of ice; along all coasts and islands of northern Eurasia and northern North America. North Atlantic and North Pacific races have been described (E. b. barbatus and E. b. nauticus Pallas, 1811).

Genus MONACHUS Fleming, 1822

Monachus monachus Hermann, 1779 (Mediterranean monk seal). Monk seals are thinly scattered along the Anatolian coast of the Black Sea, the coasts and islands of the Mediterranean Sea, the coast of northwestern Africa, southwestward to Cap Blanc (Mauritania), and in the Madeira and Canary Islands. Nearly extinct; the population probably does not exceed 500 (International Union for Conservation of Nature and Natural Resources, 1966).

Monachus tropicalis Gray, 1850 (Caribbean monk seal). The former range included shores and islands of the Greater Antilles, the Bahamas, the Yucatan Peninsula, and the Florida Keys. Probably now extinct (International Union for Conservation of Nature and Natural Resources, 1966).

Monachus schauinslandi Matschie, 1905 (Hawaiian monk seal). Breeds on Leeward Chain of the Hawaiian Islands, from French Frigate Shoals to Kure Atoll; wanders southeastward to Hawaii.

Genus LOBODON Gray, 1844

Lobodon carcinophagus Hombron and Jacquinot, 1842 (crabeater seal). Crabeaters are circumpolar and abundant in pack ice of the Southern Ocean; they straggle to southern tips of New Zealand, Australia, Tasmania, and South America.

Genus OMMATOPHOCA Gray, 1844

Ommatophoca rossi Gray, 1844 (Ross seal). Circumpolar in pack ice of Antarctic Ocean.

Genus HYDRURGA Gistel, 1848

Hydrurga leptonyx Blainville, 1820 (leopard seal). Leopard seals are circumpolar in the Southern Ocean and are recorded from most subantarctic islands, as well as the southern tips of New Zealand, Australia, South America, and South Africa.

Genus LEPTONYCHOTES Gill, 1872

Leptonychotes weddelli Lesson, 1826 (Weddell seal). Circumpolar in fast ice around Antarctica, south to lat. 80° S. in the Bay of Whales; straggling to subantarctic islands and as far north as Uruguay, lat. 35° S.

Genus CYSTOPHORA Nilsson, 1820

Cystophora cristata Erxleben, 1777 (hooded seal; bladdernose seal). North Atlantic Ocean at edges of ice from Novaya Zemlya to eastern Canada. Jan Mayen and Newfoundland breeding stocks are perhaps distinct.

Genus MIROUNGA Gray, 1827 (elephant seals)

Mirounga leonina Linnaeus, 1758 (southern elephant seal). Circumpolar on subantarctic islands, south to edges of ice at lat. 78° S. The southern elephant seal breeds along a continental coast only at Argentina. Three races have been proposed, one from the South American sector of the range, one from the southern Indian Ocean sector, and one from the New Zealand sector (Lydekker, 1909). They may be valid, but further study is required before they can be accepted.

Mirounga angustirostris Gill, 1866 (northern elephant seal). Breeds from Año Nuevo Island, Calif., south to Isla Guadalupe and Islas San Benito, Baja California. Formerly from Point Reyes, Calif., south to Cabo San Lázaro, Baja California. Ranges at sea north to southeastern Alaska.

Order SIRENIA

Family DUGONGIDAE

Genus DUGONG Lacépède, 1799

Dugong dugon P. L. S. Müller, 1776 (dugong). In tropical bays and estuaries of the Indian and western Pacific Oceans from Lourenço Marques, Mozambique, and the Red Sea, east to the Ryukyu Islands (Amami Oshima), Palau, the Solomon Islands, and northern Australia. It does not extend to the Marshall Islands, though Carter, Hill, and Tate (1945, p. 136) listed it from there. Now rare in all its range except along northern Australia (Bertram and Bertram, 1966).

Genus HYDRODAMALIS Retzius, 1794

Hydrodamalis gigas Zimmermann, 1780 (Steller sea cow; great northern sea cow). Discovered on Bering Island in western Bering Sea in 1741, the Steller sea cow was exterminated by Russian hunters about 1768. In historic time, it lived only on Bering and Copper Islands and its total population probably did not exceed one or two thousand animals. A rib was found on Attu, the westernmost Aleutian Island, in 1842 or 1843, by Ilia G. Wosnesenski. "There is no indisputable evidence of its ever having inhabited other coasts than those of the Commander Islands, as the find of a rib on Attu Island does not necessarily prove that the animal once lived there, though that is not improbable" (Stejneger, 1896, p. 20). A skull fragment about 19,000 years old was dredged from the sea floor off Monterey, Calif. (Jones, 1967). Berzin and others (1963) reported that whalers near Cape Navarin, Siberia, saw at a

distance of 80 to 100 m. animals that they identified as sea cows. We doubt the identification. Surely, over a period of two centuries, a remnant stock would have been seen by coastal natives.

Family TRICHECHIDAE

Genus TRICHECHUS Linnaeus, 1758 (manatees)

General range, shallow tropical marine waters, estuaries, and rivers on both sides of the Atlantic Ocean.

Trichechus manatus Linnaeus, 1758 (Caribbean manatee). Two races have been described: T. m. manatus from the sea coast, and lower reaches of rivers, from Bay of Campeche, Mexico, to Río Atrato, Colombia, and in the Bahamas and the Greater Antilles; and T. m. latirostris Harlan, 1824 from the coast and coastal rivers of United States from Beaufort, N.C., to Florida Keys and coasts of Gulf of Mexico; westward along coast of Texas to mouth of Rio Grande. Now extinct in many parts of its former range.

Trichechus senegalensis Link, 1795 (West African manatee). Coastal lagoons and the lower reaches of rivers from Sénégal to the Cuanza River, Angola, and in the Niger and Benue drainages of Nigeria.

Trichechus inunguis Natterer, 1883 (Amazon manatee). Rivers of northeastern South America, particularly the Amazon and Orinoco systems.

Order MYSTICETI

Family BALAENIDAE

Genus BALAENA Linnaeus, 1758

Balaena glacialis Müller, 1776 (black right whale). Temperate waters of the North Atlantic (B. g. glacialis), the North Pacific (B. g. japonica Lacépède, 1818), and the Southern Hemisphere (B. g. australis Desmoulins, 1822). The validity of the three nominal subspecies has not been confirmed.

Balaena mysticetus Linnaeus, 1758 (bowhead whale). Arctic waters. There are four geographically isolated populations: (1) From Spitzbergen west to east Greenland; (2) in Davis Strait, Baffin Bay, James Bay, and adjacent waters; (3) in the Bering, Chukchi, and Beaufort Seas; and (4) in the Okhotsk Sea. The Alaskan Eskimo recognize two kinds: the larger "kairalik" or true bowhead, and the smaller "ingotok" (known as the "poggy" to the 19th-century American whalers). We believe that the ingotok is most likely a young bowhead; the taxonomy of these whales is being studied by Floyd Durham of the University of Southern California.

Genus CAPEREA Gray, 1864

Caperea marginata Gray, 1846 (pygmy right whale). Southern Ocean; known only from strandings on New Zealand, Australia, South America, and South Africa.

Family ESCHRICHTIIDAE

Genus ESCHRICHTIUS Gray 1864

Eschrichtius gibbosus Erxleben, 1777 (gray whale). Shallow coastal waters of the North Pacific, from the Gulf of California to the Chukchi Sea on the eastern side, and from Korea to the Okhotsk Sea on the western side; formerly in the North Atlantic. If the Pacific population is eventually shown to be subspecifically distinct from the extinct North Atlantic population, the name E. g. glaucus Cope, 1868, is available for it.

Family BALAENOPTERIDAE

Genus BALAENOPTERA Lacépède, 1804

Balaenoptera acutorostrata Lacépède, 1804 (minke whale; little piked whale). Widely distributed in all oceans, though rare in tropical waters. In some Southern Hemisphere waters, what is presumably a different color phase predominates; the name bonaerensis Burmeister, 1867, has been applied. Specimens from Ceylon have been described as a separate race, B. a. thalmaha Deraniyagala, 1963.

Balaenoptera edeni Anderson, 1878 (Bryde whale). Tropical coastal waters of the Atlantic, Indian, and Pacific Oceans.

Balaenoptera borealis Lesson, 1828 (sei whale). All oceans. Two races distinguished, a smaller one (B. b. borealis) in the Northern Hemisphere, a larger one (B. b. schlegeli Flower, 1865) in the Southern Hemisphere.

Balaenoptera physalus Linnaeus, 1758 (fin whale). All oceans, but rarely in tropical waters or among pack ice. Two races are recognized--a smaller Northern Hemisphere form (B. p. physalus) and a larger Southern Hemisphere form (B. p. quoyi Fischer, 1830).

Balaenoptera musculus Linnaeus, 1758 (blue whale). All oceans. Three races are recognized; a small one (B. m. musculus) in the North Atlantic and North Pacific; a large one (B. m. intermedia Burmeister, 1871) that spends the summer in Antarctic waters; and a pygmy race (B. m. brevicauda Zemsky and Boronin, 1964) in the southern Indian Ocean. The subspecies brevicauda was proposed by Ichihara in a paper read in 1963 at the

First International Symposium on Cetacean Biology. His paper was not published until 1966 (Ichihara, 1966). Meanwhile, Zemsky and Boronin (1964) published the name brevicauda without calling it a new subspecies and without crediting Ichihara. The taxonomic status of blue whales off the coasts of Chile and Peru is not settled.

Genus MEGAPTERA Gray, 1846

Megaptera novaeangliae Borowski, 1781 (humpback whale). Nearly worldwide; winters largely in tropical waters near islands or the coast, summers in temperate and subpolar waters. This species shows little or no geographical variation in size; the several discrete populations differ in the frequency of color variations.

Order ODONTOCETI

Family PLATANISTIDAE

Genus PLATANISTA Wagler, 1830

Platanista gangetica Lebeck, 1801 (susu; Ganges dolphin). Ganges, Brahmaputra, and Indus Rivers and their larger tributaries from tidal limits to the foothills.

Genus INIA D'Orbigny, 1834

Inia geoffrensis Blainville, 1817 (bouto; bufeo; Amazon dolphin). Amazon and Orinoco basins of South America. David K. Caldwell (Marineland of Florida) and Robert L. Brownell (Smithsonian Institution) are studying geographical variation in this species.

Genus LIPOTES Miller, 1918

Lipotes vexillifer Miller, 1918 (pei c'hi; white flag dolphin; Chinese lake dolphin). Restricted to Tung-t'ing Hu (Lake) on the upper Yangtze River, China.

Genus PONTOPORIA Gray, 1846

Pontoporia blainvillei Gervais, 1844 (franciscana; La Plata dolphin). Coastal waters and estuaries of eastern South America, from Baía de Santos, Brazil, to Golfo San Matias, Argentina.

Family DELPHINIDAE

Genus STENO Gray, 1846

Steno bredanensis Lesson 1828 (rough-toothed dolphin). All tropical and warm temperate seas.

Genus SOUSA Gray, 1866

The taxonomy of the humpbacked dolphins is greatly in need of revision. Five nominal species are recognized, but individual, sexual, age, and geographic variation have not been adequately studied.

Sousa teuszi Kükenthal, 1892 (vernacular name?) Coastal waters of west Africa from Sénégal to Cameroon.

Sousa plumbea G. Cuvier, 1829 (plumbeous dolphin; lead-colored dolphin). Coastal waters of the northern Indian Ocean; recorded from Arabian Sea, Gulf of Aden, Red Sea, Persian Gulf, Karachi, the Malabar Coast, Ceylon, Madras, Burma, and the Strait of Malacca.

Sousa lentiginosa Owen, 1866 (speckled dolphin; bolla gadimi). Recorded from South Africa, Zanzibar, Somalia, India, and Ceylon; questionably recorded from Australia.

Sousa borneensis Lydekker, 1901 (Bornean white dolphin). South China Sea from Sarawak coast of Borneo to Gulf of Thailand; doubtfully recorded from Strait of Malacca.

Sousa chinensis Osbeck, 1765 (Chinese white dolphin). Coast of southern China, and lower reaches of Yangtze, Foochow, and Canton Rivers.

Genus SOTALIA Gray, 1866

Further taxonomic studies of this genus are needed. Two species are recognized--one chiefly in coastal and estuarine waters, the other in fresh water. The differences between them are slight; perhaps they are subspecies of a single species. (The Old World species formerly placed in Sotalia are now placed in a separate genus, Sousa.)

Sotalia fluviatilis Gervais and Deville, 1853 (tookashee). Amazon River and its tributaries; either this form or S. guianensis occurs in the Orinoco River.

Sotalia guianensis Van Beneden, 1864 (Guiana dolphin). Coastal waters and lower reaches of rivers of northeastern South Amercia, from Lake Maracaibo, Venezuela, to Rio de Janeiro, Brazil. Either this form or S. fluviatilis occurs in the Orinoco River.

Genus TURSIOPS Gervais, 1855

The taxonomy of this genus is under study by Robert L. Brownell.

Tursiops truncatus Montagu, 1821 (bottle-nosed dolphin). Widely distributed in temperate and tropical waters, mostly close to shore and near islands. Ranges north to Japan, Baja California, southern Greenland, and Norway; south to southern Australia, New Zealand, Chile, Argentina, and South Africa. Several supposed races or species have been named, but their characters and ranges are poorly defined. T. t. aduncus Ehrenberg, 1833,

from the tropical Indo-Pacific may be a recognizable race. Much further study is needed.

Tursiops gilli Dall, 1873. Coast of southern California and west coast of northern Baja California; also the northern end of the Gulf of California. This form appears to be a valid species (Robert L. Brownell, personal communication).

Genus GRAMPUS Gray, 1828

Grampus griseus G. Cuvier, 1812 (white-headed grampus; gray grampus; Risso's dolphin). All temperate and tropical seas.

Genus LAGENORHYNCHUS Gray, 1846

This genus contains two well-defined species in the North Atlantic and another in the North Pacific. Bierman and Slijper (1947-48) regarded all Southern Hemisphere forms as conspecific, but Fraser (1966) showed that there are probably three species. D. E. Gaskin (Massey University, New Zealand, in litt.) confirmed the specific distinction of L. cruciger and L. obscurus. L. obliquidens is closely related to L. australis. Further studies are needed on the taxonomy and distribution of the southern forms. The species electra is now placed in a separate genus, Peponocephala.

Lagenorhynchus albirostris Gray, 1846 (white-beaked dolphin). North Atlantic from Davis Strait and Newfoundland east to the Barents Sea and North Sea (rarely to Portugal).

Lagenorhynchus acutus Gray 1828 (Atlantic white-sided dolphin). North Atlantic from Massachusetts and southern Greenland east to western Norway and the British Isles.

Lagenorhynchus obliquidens Gill, 1865 (North Pacific white-sided dolphin). Waters off the coast of North America from southeastern Alaska to Baja California, and off the coast of Asia from the Kuril Islands to Japan.

Lagenorhynchus australis Peale, 1848 (black-chinned dolphin). Temperate waters off southern South America and the Falkland Islands.

Lagenorhynchus cruciger Quoy and Gaimard, 1824 (hourglass dolphin). Temperate waters of the South Atlantic and South Pacific. A pelagic species, found chiefly in waters immediately north of the Antarctic Convergence (D. E. Gaskin, in litt.).

Lagenorhynchus obscurus Gray, 1828 (dusky dolphin). Temperate waters off South America, South Africa, Kerguélen Island, southern Australia, New Zealand, and in the south-central Pacific. Primarily a coastal species (D. E. Gaskin, in litt.).

Genus LAGENODELPHIS Fraser, 1956

Lagenodelphis hosei Fraser, 1956 (Sarawak dolphin). Known from only one specimen stranded at the mouth of the Lutong River, Sarawak, Borneo.

Genus STENELLA Gray, 1866

Studies under way by F. C. Fraser of the British Museum (Natural History) should do much to clarify the taxonomy of this genus, which has long been confused. Pending the publication of the results of his studies, we offer the following tentative classification. Most named forms of the genus fall into three species groups or superspecies which are sympatric in many areas: (1) The long-snouted dolphins with about 50 teeth in each jaw, and shallow palatal grooves. This group includes S. longirostris and S. roseiventris. These two forms differ markedly in body form and color pattern, so we tentatively retain them as separate species. Specimens appearing in some respects to be intermediate, however, have been described from Japan (S. longirostris kunitomoi Kuroda, 1952). (2) The spotted dolphins with shorter snouts, about 37 teeth in each jaw, and no palatal grooves. Many different "species" (e.g., frontalis, attenuata, plagiodon, graffmani) have been named, but Rice has seen in a single school animals showing all described color variations; no consistent cranial differences have been described. Therefore we regard them all as a single species, S. dubia, admitting that recognizable geographical races may exist. (3) The striped dolphin, S. caeruleoalba, with about 44 teeth in each jaw, no palatal grooves, a dark stripe along the flank, and no spots. Only one species is recognized.

Stenella longirostris Gray, 1828 (long-snouted dolphin; eastern Pacific spinner dolphin). Tropical Atlantic, Indian, and eastern Pacific Oceans.

Stenella roseiventris Wagner, 1853 (Hawaiian spinner dolphin). The type locality is the Banda Sea, Indonesia. Fraser provisionally applies this name to the Hawaiian spinner dolphin.

Stenella dubia G. Cuvier, 1812 (spotted dolphin; bridled dolphin). Tropical waters of the Atlantic, Indian, and Pacific Oceans, chiefly near coastal areas and islands.

Stenella caeruleoalba Meyen, 1833 (striped dolphin; euphrosyne dolphin). Widely distributed in temperate and tropical waters around the world.

Genus DELPHINUS Linnaeus, 1758

(The species previously called D. roseiventris is now placed in the genus Stenella.)

Delphinus delphis Linnaeus, 1758 (common dolphin; saddleback dolphin). Widely distributed in warm temperate and tropical waters of all oceans, including the Black Sea. There may be several subspecies, but much more collecting and study are needed. We tentatively follow Hershkovitz (1966) in listing D. capensis Gray, 1828, as a synonym of D. delphis; further study of its status is needed.

Genus LISSODELPHIS Gloger, 1841

The two species of this genus differ mainly in color pattern, and they could well be regarded as races of a single species.

Lissodelphis borealis Peale, 1848 (northern right-whale dolphin). Temperate waters of the North Pacific from Japan and the Kurils to British Columbia and California.

Lissodelphis peroni Lacépède, 1804 (southern right-whale dolphin). Temperate waters of the Southern Ocean.

Genus CEPHALORHYNCHUS Gray, 1846

The taxonomy of this genus is in need of revision. See Harmer (1922). The following four species are currently recognized.

Cephalorhynchus commersoni Lacépède, 1804 (piebald dolphin, Commerson dolphin). Tierra del Fuego, Strait of Magellan, coast of Patagonia, and Falkland Islands; also Kerguélen Island in the southern Indian Ocean.

Cephalorhynchus eutropia Gray, 1849 (white-bellied dolphin; black dolphin). Coast of Chile between lat. 33° and 40° S.

Cephalorhynchus heavisidei Gray, 1828 (tonine; Haviside [sic] dolphin). Cape of Good Hope.

Cephalorhynchus hectori Van Beneden, 1881 (Hector dolphin). Coastal waters of New Zealand. Individuals with variant color patterns have been named C. albifrons True, 1899, and C. h. bicolor Oliver, 1946. Also said to occur in Sarawak, Borneo.

Genus PEPONOCEPHALA Nishiwaki and Norris, 1966

Peponocephala electra Gray, 1846 (broad-beaked dolphin; many-toothed blackfish). Tropical Atlantic, Indian, and Pacific Oceans.

Genus FERESA Gray, 1871

Feresa attenuata Gray, 1875 (pygmy killer whale). Known only from Sénégal, Japan, Hawaii, and the "South Seas."

Genus PSEUDORCA Reinhardt, 1862

Pseudorca crassidens Owen, 1846 (false killer whale). All temperate and tropical seas.

Genus GLOBICEPHALA Lesson, 1828

There appear to be two well-defined species, the ranges of which overlap off the middle-Atlantic coast of the United States, off southern Europe, off South Africa, and perhaps elsewhere.

Globicephala melaena Traill, 1809 (common pilot whale; common blackfish; pothead whale). Nominate race in the temperate North Atlantic Ocean; G. m. edwardi A. Smith, 1834, throughout temperate waters of the Southern Hemisphere.

Globicephala macrorhyncha Gray, 1846 (short-finned pilot whale; short-finned blackfish). Tropical Atlantic, Indian, and Pacific Oceans. We believe G. sieboldi Gray, 1846, of the temperate (and tropical?) North Pacific is conspecific with G. macrorhyncha, although it may be recognizable at the subspecific level. The taxonomy of Pacific Globicephala is being studied by R. L. Brownell, D. K. Caldwell, T. Kasuya, and M. Nishiwaki. (The latter two are in the Ocean Research Institute, University of Tokyo.)

Genus ORCINUS Fitzinger, 1860

Orcinus orca Linnaeus, 1758 (killer whale). All oceans, chiefly in coastal waters and cooler regions.

Genus ORCAELLA Gray, 1866

Orcaella brevirostris Owen, 1866 (Irrawaddy dolphin). Coastal waters from the Bay of Bengal east to New Guinea and northern Australia; ascends far up the Mekong, Irrawaddy, Ganges, and other rivers. The population in the Irrawaddy River is sometimes considered a separate subspecies, O. b. fluminalis Anderson, 1871.

Genus PHOCOENA G. Cuvier, 1817

According to Norris and McFarland (1958) the genus includes four species.

Phocoena phocoena Linnaeus, 1758 (harbor porpoise). Coastal waters of the North Atlantic from Delaware and the Mediterranean and Black Seas (one record from Sénégal) north to Davis Strait, Iceland, and the White Sea; coastal waters of the North Pacific from Japan and Baja California north to Point Barrow, Alaska.

The Black Sea population has been named P. p. relicta Abel, 1905.

Phocoena sinus Norris and McFarland, 1958 (Gulf of California porpoise). Upper Gulf of California; sight records farther south are questionable.

Phocoena dioptrica Lahille, 1912 (spectacled porposie). Coast of Argentina, the Falkland Islands, and South Georgia.

Phocoena spinipinnis Burmeister, 1865 (black porpoise). Coasts of Argentina, Chile and Peru.

Genus NEOPHOCAENA Palmer, 1899

Neophocaena phocaenoides G. Cuvier, 1829 (black finless porpoise). Warm coastal waters and certain rivers from India east to Japan, Borneo, and Java. The type specimen allegedly came from the Cape of Good Hope, but the occurrence of the species there has been questioned. Peter Best (South African Division of Sea Fisheries, in litt.) stated that there are no indisputable South African records. The species, being coastal, almost certainly would have been seen if present. Indian Ocean specimens may be taxonomically distinct from those of China and Japan (Fraser, 1966).

Genus PHOCOENOIDES Andrews, 1911

Phocoenoides dalli True, 1885 (Dall porpoise; white-flanked porpoise). Immediate offshore waters of the North Pacific from Japan and southern California north to the southern Bering Sea. It now appears that True's porpoise, P. truei Andrews, 1911, may be a color phase of P. dalli; this problem is being investigated by W. J. Houck (Humboldt State College) and M. Nishiwaki.

Family MONODONTIDAE

Genus DELPHINAPTERUS Lacépède, 1804

Delphinapterus leucas Pallas, 1776 (beluga; white whale). Arctic Ocean and adjacent seas, including Okhotsk and Bering Seas, and James Bay; also Gulf of St. Lawrence; ascends several hundred miles up larger rivers of Siberia and Alaska. Three races are currently recognized: D. l. dorofeevi Barabash and Klumov, 1935, from the Okhotsk Sea; D. l. marisalbi Ostroumov, 1935, in the Barents and White Seas; and D. l. leucas in the rest of the range. More study of geographical variation is needed.

Genus MONODON Linnaeus, 1758

Monodon monoceros Linnaeus, 1758 (narwhal). North polar seas.

Family PHYSETERIDAE

Genus PHYSETER Linnaeus, 1758

Physeter catodon Linnaeus, 1758 (sperm whale). All oceans (except polar ice fields).

Genus KOGIA Gray, 1846

Handley (1966) has reviewed the distinguishing features of the two species in this genus.

Kogia breviceps Blainville, 1838 (pygmy sperm whale). World-wide in tropical and warm temperate waters.

Kogia simus Owen, 1866 (dwarf sperm whale). The seas adjacent to South Africa, India, Ceylon, Japan, Hawaii, Baja California, and eastern United States.

Family ZIPHIIDAE

Genus TASMACETUS Oliver, 1937

Tasmacetus shepherdi Oliver, 1937 (Tasman beaked whale). Known only from four specimens stranded on New Zealand.

Genus MESOPLODON Gervais, 1850

Twelve species are currently recognized by Moore and Gilmore (1965). The genus is being revised by Moore.

Mesoplodon bidens Sowerby, 1804 (North Sea beaked whale). Cool temperate waters of the North Atlantic from New England to the North Sea.

Mesoplodon europaeus Gervais, 1855 (Antillean beaked whale). Western North Atlantic from Trinidad, Jamaica, and the Gulf of Mexico, to Long Island, N.Y.; one record from southern England.

Mesoplodon mirus True, 1913 (True beaked whale). North Atlantic from Florida and Nova Scotia east to the British Isles; one record from South Africa.

Mesoplodon pacificus Longman, 1926 (Longman beaked whale). Known from only one specimen stranded at Mackay, Queensland, Australia.

Mesoplodon grayi Haast, 1876 (scamperdown whale). South Africa, South Australia, New Zealand, Chatham Islands, and Argentina; one record from the Netherlands.

Mesoplodon hectori Gray, 1871 (Hector beaked whale). Known only from Tasmania, New Zealand, and the Falkland Islands.

Mesoplodon stejnegeri True, 1885 (Bering Sea beaked whale). Subarctic waters of the North Pacific from the Bering Sea south to Japan and Oregon.

Mesoplodon carlhubbsi Moore, 1963 (arch-beaked whale). Temperate waters of the North Pacific from Japan east to Washington and California.

Mesoplodon bowdoini Andrews, 1908 (vernacular name?). Known only from New Zealand, Tasmania, and Western Australia.

Mesoplodon ginkgodens Nishiwaki and Kamiya, 1958 (vernacular name?). Recorded from Ceylon, Japan, and California.

Mesoplodon layardi Gray, 1865 (strap-toothed whale). South Africa, southern Australia, New Zealand, and the Falkland Islands.

Mesoplodon densirostris Blainville, 1817 (dense-beaked whale). Tropical and warm temperate waters of all oceans.

Genus ZIPHIUS G. Cuvier, 1823

Ziphius cavirostris G. Cuvier, 1823 (goose-beaked whale). All temperate and tropical seas.

Genus BERARDIUS Duvernoy, 1851

Two allopatric species are recognized. The North Pacific form differs from the Southern Hemisphere form chiefly by its much larger size. Possibly it should be regarded as only a subspecies of the Southern Hemisphere form. The taxonomy of this genus is under study by J. C. Moore (Field Museum of Natural History).

Berardius arnouxi Duvernoy, 1851 (southern giant bottle-nose whale). Southern Ocean; known from South Australia, New Zealand, Argentina, Falkland Islands, South Georgia, South Shetlands, South Africa, and off the Antarctic Peninsula.

Berardius bairdi Stejneger, 1883 (North Pacific giant bottle-nose whale). North Pacific from Japan and southern California north to the Bering Sea.

Genus HYPEROODON Lacépède, 1804

Two well-defined species are recognized, one in the North Atlantic, the other in the Southern Hemisphere. The occurrence of Hyperoodon in the North Pacific has never been verified, and most if not all published records of its occurrence there are based on misidentification of Berardius. Beaked whales possibly referable to Hyperoodon are taken by whalers off the Okhotsk Sea coast of Hokkaido, but to date none have been examined by a biologist (M. Nishiwaki, personal communication).

Hyperoodon ampullatus Forster, 1770 (North Atlantic bottle-nose whale). North Atlantic from Davis Strait and Novaya Zemlya south to Rhode Island and the Mediterranean Sea.

Hyperoodon planifrons Flower, 1882 (flat-headed bottle-nose whale). Southern Ocean; known from Australia, New Zealand, Argentina, the Falkland Islands, South Georgia, the South Orkney Islands, South Africa, and off the coast of Antarctica in the Pacific and Indian Ocean sectors.

SYNONYMS

Listed below are generic and specific synonyms frequently appearing in recent literature.

In recent literature	In present list
Arctocephalus elegans	Arctocephalus tropicalis
Arctocephalus galapagoensis	Arctocephalus australis
Arctocephalus gazella	Arctocephalus tropicalis
Arctocephalus tasmanicus	?Arctocephalus doriferus
Arctocephalus townsendi	Arctocephalus philippii
Arctophoca	Arctocephalus
Balaena australis	Balaena glacialis
Balaena sieboldi	Balaena glacialis
Balaenoptera bonaerensis	Balaenoptera acutorostrata
Balaenoptera brydei	Balaenoptera edeni
Balaenoptera davidsoni	Balaenoptera acutorostrata
Balaenoptera huttoni	Balaenoptera acutorostrata
Callorhinus alascensis	Callorhinus ursinus
Callorhinus curilensis	Callorhinus ursinus
Callorhinus cynocephalus	Callorhinus ursinus
Callorhinus mimicus	Callorhinus ursinus
Cephalorhynchus albifrons	Cephalorhynchus hectori
Cephalorhynchus albiventris	Cephalorhynchus eutropia
Delphinapterus dorofeevi	Delphinapterus leucas
Delphinapterus friemani	Delphinapterus leucas
Delphinus bairdi	Delphinus delphis
Delphinus capensis	?Delphinus delphis
Delphinus longirostris	?Delphinus delphis
Delphinus roseiventris	Stenella roseiventris
Electra	Peponocephala
Eschrichtius glaucus	Eschrichtius gibbosus
Eschrichtius robustus	Eschrichtius gibbosus
Eubalaena	Balaena

In recent literature	In present list
Eumetopias stelleri	Eumetopias jubatus
Feresa intermedia	Feresa attenuata
Feresa occulta	Feresa attenuata
Globicephala brachyptera	Globicephala macrorhyncha
Globicephala edwardi	Globicephala melaena
Globicephala scammoni	Globicephala macrorhyncha
Globicephala sieboldi	Globicephala macrorhyncha
Grampidelphis	Grampus
Grampus orca	Orcinus orca
Grampus rectipinna	Orcinus orca
Gypsophoca	Arctocephalus
Hydrodamalis stelleri	Hydrodamalis gigas
Hyperoodon rostratus	Hyperoodon ampullatus
Lagenorhynchus electra	Peponocephala electra
Lagenorhynchus fitzroyi	Lagenorhynchus obscurus
Lagenorhynchus ognevi	Lagenorhynchus obliquidens
Lagenorhynchus superciliosus	?Lagenorhynchus obscurus
Lagenorhynchus thicolea	?Lagenorhynchus obliquidens
Lagenorhynchus wilsoni	Lagenorhynchus cruciger
Megaptera nodosa	Megaptera novaeangliae
Meomeris	Neophocaena
Mesoplodon gervaisi	Mesoplodon europaeus
Mesoplodon hotaula	Mesoplodon gingkodens
Monachus albiventer	Monachus monachus
Neobalaena	Caperea
Neomeris	Neophocaena
Neophoca hookeri	Phocarctos hookeri
Neophoca lobatus	Neophoca cinerea
Nodus	Mesoplodon
Odobenus divergens	Odobenus rosmarus
Orcaella fluminalis	Orcaella brevirostris
Orcella	Orcaella
Orcinus rectipinna	Orcinus orca
Otaria byronia	Otaria flavescens
Phoca caspica	Pusa caspica
Phoca fasciata	Histriophoca fasciata
Phoca groenlandica	Pagophilus groenlandicus
Phoca hispida	Pusa hispida
Phoca richardi	Phoca vitulina
Phoca sibirica	Pusa sibirica
Phocoena vomerina	Phocoena phocoena
Phocoenoides truei	Phocoenoides dalli
Physeter macrocephalus	Physeter catodon
Prodelphinus	Stenella
Rhachianectes	Eschrichtius
Rhytina	Hydrodamalis
Sibbaldus	Balaenoptera
Sotalia borneensis	Sousa borneensis
Sotalia brasiliensis	Sotalia guianensis
Sotalia chinensis	Sousa chinensis
Sotalia gadamu	Tursiops truncatus
Sotalia lentiginosa	Sousa lentiginosa
Sotalia pallida	Sotalia fluviatilis
Sotalia plumbea	Sousa plumbea
Sotalia sinensis	Sousa chinensis
Sotalia teuszi	Sousa teuszi
Sotalia tucuxi	Sotalia fluviatilis
Stenella alope	Stenella longirostris
Stenella attenuata	Stenella dubia
Stenella euphrosyne	Stenella caeruleoalba
Stenella fraenata	Stenella dubia
Stenella frontalis	Stenella dubia
Stenella graffmani	Stenella dubia
Stenella malayana	Stenella dubia
Stenella microps	Stenella longirostris
Stenella plagiodon	Stenella dubia
Stenella styx	Stenella caeruleoalba
Steno rostratus	Steno bredanensis
Stenodelphis	Pontoporia
Stenorhinchus	Hydrurga
Stenorhynchus	Hydrurga
Susu	Platanista
Trichechus latirostris	Trichechus manatus
Tursiops abusalum	Tursiops truncatus
Tursiops aduncus	Tursiops truncatus
Tursiops catalania	Tursiops truncatus
Tursiops gadamu	Tursiops truncatus
Tursiops nesarnack	Tursiops truncatus
Tursiops nuuanu	Tursiops truncatus
Zalophus cinereus	Neophoca cinerea
Zalophus japonicus	Zalophus californianus
Zalophus lobatus	Neophoca cinerea
Zalophus wollebaeki	Zalophus californianus

BIBLIOGRAPHY

By

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The sources given below are mainly checklists, systematic reviews, and faunal lists ("faunas"). Through reference to these sources the reader will find the titles of many hundreds of articles dealing with individual species. Titles cited in the present report are starred (*).

The report deals with the living marine mammals. Readers interested in fossil forms are referred to the following publications: Colbert (1955); DeBeer (1964); Dechaseaux (in Piveteau, 1952-); Kellogg (1928, 1936); King (1964); Matthes (1962); Mitchell (1966a, b); Piveteau (1952-); Reinhart (1959); Romer (1966); Simpson (1945); Slijper (1936).

ALLEN, G. M.
1938-40. The mammals of China and Mongolia. Amer. Mus. Natur. Hist., Natur.

Hist. Central Asia, vol. 11, part 1 (1938): 1-620 and part 2 (1940): 621-1350.

1939. A checklist of African mammals. Bull. Mus. Comp. Zool. Harvard 83: 1-763.

1942. Extinct and vanishing mammals of the western hemisphere with the marine species of all the oceans. New York, Amer. Comm. Int. Wild Life Protect., Spec. Publ. 11, xvi + 620 pp.

*ANDERSON, SYDNEY, and J. KNOX JONES, JR. (Editors).

1967. Recent mammals of the world, a synopsis of families. Ronald Press Co., New York, 8 + 453 pp.

BARNARD, K. H.

1954. A guide book to South African whales and dolphins. Guide No. 4, South African Museum, Capetown, 33 pp.

*BELKIN, A. N.

1964. Novyi vid tyulenya s Kuril'skikh Ostrovov--Phoca insularis sp. n. [A new species of seal, Phoca insularis sp. n., from the Kuril Islands.] Dokl. Akad. Nauk SSSR, 158(5): 1217-1219. (Translation seen, Dokl. Biol. Sci. 158(5): 756-759; 1964.)

*BERTRAM, KATE, and COLIN BERTRAM.

1966. The Sirenia: a vanishing order of mammals. Anim. Kingdom 69(6): 180-184.

*BERZIN, A. A., E. A. TIKHOMIROV, and V. I. TROININ.

1963. Ischezla li stellerova korova? [Is the Steller sea cow really extinct?] Priroda 52(8): 73-75.

*BIERMAN, W. H., and E. J. SLIJPER.

1947-48. Remarks upon the species of the genus Lagenorhynchus. I. and II. Kon. Ned. Akad. Wetensch., Amsterdam, Afd. Natuur. 50(10): 1353-1364; 51(1): 127-133.

BOURDELLE, E., and P.-P. GRASSÉ.

1955. Ordre des cetaces [17(1): 341-450]. In Traité de zoologie: anatomie, systematique, biologie. Publié sous la direction de Pierre-P. Grassé. Masson, Paris, 18 vols. (Pages 439-444, on fossil cetaceans, are by R. Lavocat.)

BUDKER, PAUL.

1958. Whales and whaling. George G. Harrap, London, 184 pp., 32 pls.

CABRERA, A.

1957. Catalogo de los mamiferos de America del Sur. I. Metatheria - Unguiculata - Carnivora. Buenos Aires, Rev. Mus. Argentino Cienc. Natur. "Bernardino Rivadavia" Cienc. Zool. 4(1): 1-307.

1960. Catalogo de los mamiferos de America del Sur. II. Sirenia - Perissodactyla - Artiodactyla - Lagomorpha - Rodentia - Cetacea. Rev. Mus. Argentino Cienc. Natur. "Bernardino Rivadavia" Cienc. Zool. 4(2): 309-732.

CABRERA, A., and J. YEPES.

1940. Mamiferos sud-americanos. Compania Argentina de Editores, Buenos Aires, 370 pp., 78 col. pls., 1 col. map. (Includes 11 paintings in color of marine mammals.)

CADENAT, J.

1959. Rapport sur les petits cetaces ouest-africains. Resultats des recherches entreprises sur ces animaux jusqu'au mois de mars 1959. Bull. Inst. Franç. Afr. Noire, Ser. A, 21(4): 1367-1440.

*CARTER, T. D., J. E. HILL, and G. H. H. TATE.

1945. Mammals of the Pacific world. Macmillan Co., New York, xviii + 227 pp.

*CHAPSKII, K. K.

1967. Morfologo-taksonomicheskaya kharakteristike pagetodnoi formi largi Beringova morya (Morphological-taxonomical characteristics of the pagetoda [ice-loving] form of the Bering Sea largha). Tr. Poliar. Nauch., -Issled. Proekt. Inst. Morsk. Rybn. Khoz. Okeanogr. 21: 147-176.

COLBERT, EDWIN H.

1955. Evolution of the vertebrates. John Wiley and Sons, New York, Sci. Ed., xiv + 479 pp.

DE BEER, GAVIN.

1964. Atlas of evolution. Thomas Nelson and Sons, London, New York, 202 pp.

*DOUTT, J. KENNETH.

1942. A review of the genus Phoca. Ann. Carnegie Mus. 29: 61-125, 14 pls.

ELLERMAN, J. R., and T. C. S. MORRISON-SCOTT.

1966. Checklist of Palaearctic and Indian mammals, 1758-1946. 2d ed. Brit. Mus. (Natur. Hist.), London, 810 pp. (The section on Cetacea was written with the help of F. C. Fraser.)

ELLERMAN, J. R., T. C. S. MORRISON-SCOTT, and R. W. HAYMAN.

1953. Southern African mammals 1758-1951: a reclassification. Brit. Mus. (Natur. Hist.), London, 363 pp., 2 frontis., maps.

FLOWER, W. H.

1883. On the characters and divisions of the family Delphinidae. Proc. Zool. Soc. London 1883: 466-513.

FRASER, F. C.

1949[1937]. Whales and dolphins. In J. R. Norman and F. C. Fraser, Field book of giant fishes, pp. 201-349, col. pls. 6-8. G. Putnam's Sons, New York.

(This is a reprint, with slight change in format, of "Giant fishes, whales, and dolphins," 1937.)

* 1966. Comments on the Delphinoidea. In Kenneth S. Norris (editor), Whales, dolphins, and porpoises, pp. 7-31. Univ. Calif. Press, Berkeley and Los Angeles, xvi + 789 pp.

FRASER, F. C., and H. W. PARKER.
1953. Guide for the identification and reporting of stranded whales, dolphins, porpoises and turtles on the British coasts. 2d ed. Brit. Mus. (Natur. Hist.), London viii + 42 pp. (Illustrations and a key to 24 species of cetaceans.)

*FRASER, F. C., and P. E. PURVES.
1960. Hearing in cetaceans . . . . Bull. Brit. Mus. (Natur. Hist.), London, Zool. 7(1): 1-140, 53 pls., 1 col. frontis.

GIBSON-HILL, C. A.
1949. The whales, porpoises, and dolphins known in Malayan waters. Malayan Natur. J. 4(2): 44-61.
1950. The whales, porpoises, and dolphins known in Sarawak waters. Sarawak Mus. J. 5(2): 288-296.

HALL, E. R., and K. R. KELSON.
1959. The mammals of North America. Ronald Press Co., New York, 2 vols., 1083 pp.

*HANDLEY, C. O., JR.
1966. A synopsis of the genus Kogia (pygmy sperm whale). In Kenneth S. Norris (editor, Whales, dolphins, and porpoises, pp. 62-69. Univ. Calif. Press, Berkeley and Los Angeles, xvi + 789 pp.

*HARMER, S. F.
1922. On Commerson's dolphin and other species of Cephalorhynchus. Proc. Zool. Soc. London 1922: 627-638.

HATT, R. T.
1934. A manatee collected by the American Museum Congo Expedition, with observations on the Recent manatees. Bull. Amer. Mus. Natur. Hist. 66: 533-566, 1 pl.

HERSHKOVITZ, P.
1961. On the nomenclature of certain whales. Fieldiana-Zool. 39(49): 547-565.

* 1966. Catalog of living whales. U.S. Nat. Mus. Bull. 246, 259 pp.

ICHIHARA, T.
1961. Blue whales in the waters around Kerguelen Island. Norsk Hvalfangst-Tid. 50(1): 1-20.

* 1966. The pygmy blue whale, Balaenoptera musculus brevicauda, a new subspecies from the Antarctic. In Kenneth S. Norris (editor), Whales, dolphins, and porpoises, pp 79-113. Univ. Calif. Press, Berkeley and Los Angeles, xvi + 789 pp.

*INTERNATIONAL TRUST FOR ZOOLOGICAL NOMENCLATURE.
1961. International code of zoological nomenclature adopted by the XV international congress of zoology. Published by the Trust, London, xviii + 176 pp.

*INTERNATIONAL UNION FOR CONSERVATION OF NATURE and NATURAL RESOURCES.
1966. Red data book. Vol. 1--Mammalia, a compilation by Noel Simon. Morges, Switzerland. [Several hundred loose-leaf printed pages, kept up to date with new and replacement pages.]

*JONES, ROBERT E.
1967. A Hydrodamalis skull fragment from Monterey Bay, California. J. Mammal. 48: 143-144.

KELLOGG, REMINGTON.
1928. The history of whales--their adaptation to life in the water. Quart. Rev. Biol. 3: 29-76; 3: 174-208.
1936. A review of the Archaeoceti. Carnegie Inst. Washington, 366 pp.
1940. Whales: giants of the sea. Nat. Geogr. Mag. 67: 35-90.

KENYON, K. W.
1957. The sea otter. Oryx 4: 153-158.
* In press. The sea otter. U.S. Fish Wildl. Serv., N. Amer. Fauna.

KHUZIN, R. SH.
* 1963. Materialy po morfologicheskoi kharakteristike trekh stad Grenlandskogo tiulenia Pagophilus groenlandicus Erxl. 1777 (Data on the morphological characteristics of three stocks of Greenland seals Pagophilus groenlandicus Erxl. 1777). In Materialy rybokhoziaistvennykh isledovanii severnogo basseina. Sbornik 1: 51-54. Tr. Poliar. Nauch.-Issled. Proekt. Inst. Morsk. Rybn. Khoz. Okeanogr.
* 1967. Izmenchivost kraniologicheskikh priznakov Grenlandskogo tiulenia (The variability of craniological characters of the Greenland seal). Tr. Poliar. Nauch.-Issled. Proekt. Inst. Morsk. Rybn. Khoz. Okeanogr. 21: 27-50.

KING, JUDITH E.
* 1960. Sea lions of the genera Neophoca and Phocarctos. Mammalia 24: 444-456.
* 1964. Seals of the world. Brit. Mus. (Natur. Hist.), London, 154 pp.

*LYDEKKER, R.
1909. On the skull-characters in the southern sea-elephant. Proc. Zool. Soc. London 1909: 600-606.

* 1960. Are the Pinnipedia biphyletic? Syst. Zool. 9: 18-28.
* 1966. Taxonomy of harbor seals of the western North Pacific and evolution of certain other hair seals. J. Mammal. 47: 466-473.

MANSFIELD, A. W.
* 1959. The walrus in the Canadian Arctic. Fish. Res. Bd. Can., Circ. 2, 13 pp.
* 1967. Distribution of the harbor seal, Phoca vitulina Linnaeus, in Canadian arctic waters. J. Mammal. 48: 249-257.

MATTHES, H. W.
1962. Verbreitung der Säugetiere in der Vorzeit. In Handbuch der Zool. Band 8, Lief. 28, Teil 11, Beitrag 1: 1-198. Walter de Gruyter & Co., Berlin.

MILLER, G. S., JR., and REMINGTON KELLOGG.
1955. List of North American Recent mammals. Bull. U.S. Nat. Mus. 205: xii + 954 pp.

MITCHELL, EDWARD.
* 1966a. Faunal succession of extinct North Pacific marine mammals. Norsk Hvalfangst-Tid. 55(3): 47-60.
1966b. The Miocene pinniped Allodesmus. Univ. Calif. Pub. Geol. Sci. 61: 1-105.

MOORE, J. C.
1953. Distribution of marine mammals to Florida waters. Amer. Midland Natur. 49: 117-158.

*MOORE, J. C., and R. M. GILMORE.
1965. A beaked whale new to the Western Hemisphere. Nature (London) 205 (4977): 1239-1240.

*MURIE, OLAUS J.
1959. Fauna of the Aleutian Islands and Alaska Peninsula . . . U.S. Fish Wildl. Serv., N. Amer. Fauna 61, xiv + 406 pp.

NISHIWAKI, M.
1965. Whales and pinnipeds. Univ. Tokyo Press, Tokyo, xviii + 439 pp. Illustrated by M. Yabuuchi. [In Japanese except for scientific names; profusely illustrated by pen-and-ink sketches; mainly taxonomic.]

*NORRIS, KENNETH S., and WILLIAM N. MCFARLAND.
1958. A new harbor porpoise of the genus Phocoena from the Gulf of California. J. Mammal. 39: 22-39, 4 pls.

NORRIS, K. S., and J. H. PRESCOTT.
1961. Observations on Pacific cetaceans of Californian and Mexican waters. Univ. Calif. Publ. Zool. 63: 291-402, 25 pls.

OLIVER, W. R. B.
1922a. The whales and dolphins of New Zealand. New Zealand J. Sci. Technol. 5: 129-141.
1922b. A review of the Cetacea of the New Zealand seas. Proc. Zool. Soc. London 1922: 557-585.

*PETERSON, RICHARD S., and GEORGE A. BARTHOLOMEW.
1967. The natural history and behavior of the California sea lion. Amer. Soc. Mammal., Spec. Publ. 1, xii + 79 pp.

PETIT, G.
1955. Ordre des sireniens. In Traité de zoologie: anatomie, systematique, biologie, tome 17, fasc. 1: 918-1001. Publié sous la direction de Pierre-P. Grassé. Masson, Paris, 18 vols. (Pages 993-999, on fossil sirenians, are by J. Viret.)

PIVETEAU, JEAN (editor)
1952. Traité de paléontologie. Masson, Paris. [Tome 6, vol. 1, 1961: 1, 138 pp., describes fossil sea otter, pinnipeds, and cetaceans; Tome 6, vol. 2, 1958: 962 pp., describes fossil sirenians.]

REINHART, R. H.
1959. A review of the Sirenia and Desmostylia. Univ. Calif. Pub. Geol. Sci. 36: 1-146.

ROMER, ALFRED SHERWOOD.
1966. Vertebrate paleontology. 3d ed. Univ. Chicago Press, Chicago, x + 468 pp.

*SCHEFFER, V. B.
1958. Seals, sea lions, and walruses; a review of the Pinnipedia. Stanford Univ. Press, Stanford, x + 179 pp., 32 pls.

*SCHEFFER, V. B., and D. W. RICE.
1963. A list of the marine mammals of the world. U.S. Fish Wildl. Serv. Spec. Sci. Rep. Fish. 431, 12 pp.

SCHEFFER, V. B., and J. W. SLIPP.
1948. The whales and dolphins of Washington State with a key to the cetaceans of the west coast of North America. Amer. Midland Natur. 39: 257-337.

*SCHEFFER, VICTOR B., and FORD WILKE.
1950. Validity of the subspecies Enhydra lutris nereis, the southern sea otter. J. Wash. Acad. Sci. 40(8): 269-272.

SERGEANT, D. E.
1961. Whales and dolphins of the Canadian east coast. Fish. Res. Board Can., Arctic Unit, Circ. 7, iii + 26 pp.

SERGEANT, D. E., and H. D. FISHER.
1957. The smaller Cetacea of eastern Canadian waters. J. Fish. Res. Board Can. 14: 83-115.

SIMPSON, G. G.
1945. The principles of classification and a classification of mammals. Bull. Amer. Mus. Natur. Hist. 85, xvi + 350 pp.

SLIJPER, E. J.
1936. Die Cetaceen. Capita Zool. 7: 1-590.
1958. Walvissen. D. B. Centen's Uitgeversmaatschappij, Amsterdam, 524 pp.
1962. Whales. Translated by A. J. Pomerans. Basic Books, New York, 475 pp.
*SMIRNOV. NESTOR.
1927. Diagnostical remarks about some seals (Phocidae) of the Northern Hemisphere. Tromsø Mus. Årsb. 48 (5): 1-23.
STEJNEGER, LEONHARD.
* 1896. The Russian fur-seal islands. U.S. Fish Comm. Bull. for 1896, art. 1: 1-148, pls. 1-66.
* 1898. The Asiatic fur-seal islands and fur-seal industry. In David Starr Jordan and associates (editors), The fur seals and fur-seal islands of the North Pacific Ocean, [part 4, 384 pp., 113 pls. and maps]. U.S. Treas. Dep. Doc. 2017, 4 parts.
TOMILIN, A. G.
1954. Prisposobitelnye tipy otriada kitoobraznykh (K voprosu ob ekologicheskoi klassifikatsii Cetacea) [Adaptive types in the order Cetacea--The problem of an ecological classification of Cetacea]. Zool. Zh. 33: 677-692. (Translation series No. 95, Fish. Res. Board Can. 1957.)
1957. Zverii SSSR i priilyezhaxhik stran. Tom 9. Kitoobrazniye [Mammals of USSR and adjacent countries. Vol. 9. Cetacea]. Moscow, Akad. Nauk SSSR, 756 pp., 12 pls. [English translation by Israel Program for Scientific Translations, 1967, xxii + 717 pp.]
TROUESSART, E. L.
1897-1905. Catalogus mammalium tam viventium quam fossilium. R. Friedländer und Sohn, Berlin, 2 vols. 1469 pp.
TRUE, F. W.
1889. Contributions to the natural history of the cetaceans, a review of the family Delphinidae. Bull. U.S. Nat. Mus. 36, 192 pp., 47 pls.
1910. An account of the beaked whales of the family Ziphiidae. Bull. U.S. Nat. Mus. 73, v + 89 pp., 42 pls.
TURNER, W.
1912. The marine mammals in the anatomical museum of the University of Edinburgh. Macmillan and Co. Ltd., London, xv + 207 pp., 17 pls. (Many good photographs of skulls.)
WALKER, ERNEST P.
1964. Mammals of the world. Johns Hopkins Press, Baltimore, vols. 1 and 2, 1500 pp., vol. 3, 769 pp.
YAÑEZ, P.
1948. Vertebrados marinos Chilenos. I. Mamiferos. Rev. Biol. Mar. 1(2): 103-123.
*YABLOKOV, A. V., and V. YA. ETIN.
1965. Analiz populyatsionnykh razlichii v okraske tela mlekopitayushchikh (na primere grenlandskogo tyulenya) [Analysis of population differences in the body coloring of mammals (as exemplified by the harp seal, Phoca groenlandica).] Zool. Zh. 44(7): 1103-1106. (English summary.)
*YABLOKOV, A. V., and D. E. SERGEANT.
1963. Izmenchivost kraniologicheskikh priznakov grenlandskogo tyulenya (Pagophilus groenlandicus Erxleben, 1777) [Cranial variations in the harp seal (Pagophilus groenlandicus Erxleben, 1777]. Zool. Zh. 42(12): 1857-1865. (Canada State Bureau for Translations No. 3908, 16 pp., 1964.)
*ZEMSKY, V. A., and V. A. BORONIN.
1964. On the question of the pygmy blue whale taxonomic position. Norsk Hvalfangst-Tid. 53(11): 306-311.

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